

***NATIONAL WEATHER SERVICE WESTERN REGION SUPPLEMENT 11-2003  
APPLICABLE TO NWSI 10-515  
SEPTEMBER 21, 2006***

***Operations and Services  
Public Weather Services, NWSPD 10-5  
WFO Non-Precipitation Weather Products Specification, NWSI 10-515  
WESTERN REGION NON-PRECIPITATION WEATHER PRODUCTS***

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**NOTICE:** This publication is available at: <http://www.nws.noaa.gov/directives/>.

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***SUMMARY OF REVISIONS:*** This supplement supersedes Western Region Supplement 11-2003 to Instruction 10-515, dated March 15, 2006. Revisions include: Local criteria for Frost Advisories and Freeze Warnings; minor revision to Excessive Heat Criteria section, encouraging local offices to set criteria as needed.

<u>Signed</u>	<u>08/31/06</u>
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Director, Western Region	

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1. Description. Hazardous weather not directly involving precipitation, such as high wind or dense fog, is addressed by Western Region (WR) Weather Forecast Offices (WFOs) with non-precipitation weather outlooks, watches, warnings, and advisories. They are issued when conditions are expected to meet established criteria that pose a threat to people in the County Warning and Forecast Area (CWFA). Weather that does not meet hazardous criteria should be addressed in products such as the Short Term Forecast (AWIPS header NOW) or Special Weather Statement (AWIPS header SPS).

1.1 Forecaster Judgement. Written instructions cannot address every operational situation. All WFO personnel must exercise initiative and professional judgement to minimize risk to public safety and property in situations not explicitly covered by written instructions. Personnel must balance safety and needs of customers against frequency of warnings and possible constraint of travel and commerce. Protection of life and property shall take precedence in these decision making processes. As such, criteria for advisories and warnings are considered guidance only, not strict thresholds. Forecasters may issue warnings based upon lower criteria if the event in question poses a significant threat to life due to timing or other circumstances.

2. Products. Outlooks for potentially hazardous non-precipitation weather should be included in Hazardous Weather Outlook (AWIPS header HWO). Outlooks can also be issued as separate Special Weather Statements (SPS) as stated in 10-515 section 3.2, but these statements should be reserved for major storms, big changes to the current weather pattern, and other circumstances in which the forecaster believes customers should receive heightened awareness of the upcoming event.

Watches, warnings, and advisories for non-precipitation weather hazards are issued under the category NPW, and should be referenced in the appropriate section of the HWO. Each of these products use the modernized site ID for the appropriate WFO in the AWIPS header. See <http://ww2.wrh.noaa.gov/public/WMOheaders/warningprods.htm> for a full list of WMO and AWIPS IDs for WR non-precipitation weather products.

The MND header for all non-precipitation (NPW) products will not be “Non-Precipitation Watch/Warning/Advisory”, but will simply be “Urgent - Weather Message” as per 10-515.

2.1 Product Types and Appropriate Lead Times.

- a. Outlooks. Outlooks are issued in the HWO for potential hazards which may develop in the Day 3-7 period of the forecast. An SPS may be issued for these events if required by local customers under the MND header “Special Weather Statement”. It is appropriate to include non-warning/advisory conditions in the HWO if those conditions could pose a significant threat to the public if they are not prepared.
- b. Watches. Watches are issued when the risk of a hazardous weather event is significant in the 12 to 48 hour time frame, but occurrence, location, severity, and/or timing is uncertain. Watches may be issued beyond 48 hours for large

synoptic scale storms, but care must be used so that we do not reduce the effectiveness of watches by issuing too many false alarms.

- c. Warnings. Warnings are issued when an event meeting established criteria is occurring, imminent, or has a significant probability of occurrence within 36 hours. Warnings may be issued beyond 36 hours for large synoptic scale storms, but care must be used so that we do not reduce the effectiveness of warnings by issuing too many false alarms.
- d. Advisories. Advisories are issued for certain events that have a significant probability of occurrence in the first 36 hours. These events are defined as non life-threatening by themselves, but they could become life-threatening if caution is not exercised.

2.2 Relationship to Winter Weather Statements (WSW). High Wind Watches/Warnings and Wind Advisories will not be issued within WSWs. Issue all High Wind Watches/Warnings/Advisories as their own NPW product. Winter weather warnings/advisories will not be combined with non-precipitation hazards in the NPW product at any time.

2.2.1 Combined Wind and Snow Events. If strong winds will be in the same zones as winter precipitation that meets criteria, issue Blizzard/Winter Storm Warning or Snow and Blowing Snow Advisory rather than a separate WSW and NPW.

2.3 Relationship to Short Term Forecast (NOW). Both hazardous and non-hazardous non-precipitation weather may be addressed in the Short Term Forecast (NOW). When locally-established criteria for non-precipitation weather are met, NOWs should be issued to relay information for approximately the one to three hour time frame. When warnings or advisories are in effect, the appropriate headlines should be included in the NOW. NOWs should contain detailed information on timing and location (i.e., use “wind will be strongest near Cajon Pass until noon” rather than “gusty winds at times early today”).

2.4 Relationship to Severe Thunderstorm Warning (SVR). There will be times when high wind events are both convective and "gradient" in nature, such as convective cells embedded in strong gradient wind flows. In these instances forecaster discretion and sound judgement will determine which type of warning is the most appropriate; however, when damaging wind can be directly related to convective cells, a Severe Thunderstorm Warning is most appropriate.

2.5 Air Stagnation Events. Air Stagnation Advisories (ASA) are issued under the NPW product category. In WR, ASAs are used to alert the public and environmental quality (DEQ) officials of upcoming or current weather conditions that could contribute to poor natural ventilation for a period of days, and thus potentially poor air quality. DEQ officials use the ASA information to plan mitigation efforts, such as their own advisories or warnings, pollution controls, and/or burn bans. The ASA is not used to relay pollution information from the DEQs, but is considered weather information guidance to the DEQs to help them in their decision-making.

Air Stagnation *outlook* information may be transmitted in the HWO, SPS or in the AFD product. At present, air stagnation *outlooks* cannot be issued as NPWs as the NWS has not yet implemented the “outlook” significance code in VTEC. If using the NPW is desired for air stagnation *outlook* information, a WFO will have to issue it as an actual Air Stagnation Advisory (VTEC Code AS.Y) until the “outlook” VTEC code is implemented.

3. Criteria. Criteria for non-precipitation watches/warnings/advisories will consider climatology and customer needs, and reflect a balance between public safety and too many false alarms. Customers, emergency management officials, concerned federal, state and local government agencies, the media, Western Region Headquarters (MSD), and all other appropriate groups must be made aware of WFOs criteria for watches, warnings, and advisories. Awareness must be maintained with these local customers and partners through regular outreach, and those groups with the most at stake should have input into the process of choosing criteria changes as it affects their operations.

The State Liaison Office MIC (SLOMIC) will coordinate all criteria with MICs of WFOs within his/her state to ensure consistency for climatologically similar areas, keeping in mind those separated by state or county borders. To aid the coordination of warning and advisory criteria in adjacent CWFAs, WFOs will post their winter weather watch/warning/advisory criteria in their SDM on the MSD intranet site <http://sdm.wrh.noaa.gov>.

### 3.1 High Wind.

3.1.1 High Wind Warnings. The criteria for high wind warnings in the Western Region is **sustained winds of 40 mph or higher and/or gusts of 58 mph or greater**, unless otherwise defined below. Forecaster judgement is crucial in deciding whether or not to issue High Wind Warning. The forecaster must take into account the affect of the expected high wind (how much damage may occur), the areal extent of the wind, and the length of time the wind will occur, when making the decision. The criterion set herein is guidance; the overriding factor in the warning decision is the affect to life and property.

If a single high wind report occurs when no warning is in effect, and it is not expected to continue, the issuance of a high wind warning is not required and a special weather statement (SPS) or short term forecast (NOW) should be issued.

Exceptions to the regional high wind warning criteria for specific areas are:

- a. **Mountain Areas.** Since mountain winds frequently exceed the criteria above, especially over ridges or exposed peaks, the criteria for high wind warnings in the mountains may be increased. In most areas, mountain high wind warning criteria should be sustained winds of 50 mph or higher and/or gusts to 75 mph or greater over areas affecting the populace, e.g. ski resorts, roads through mountain passes, etc. Other criteria can be defined based on local need. The forecaster's best judgement, along with these recommended criteria, will provide the final determination of whether or not a high wind warning or watch is issued. The lower vertical limit of “mountains” will be described by local definitions

established by the SLOMIC/MIC, but should be understood by users and the media, and will be clearly documented in the SDM.

- b. **Upper Yellowstone Valley, (in the vicinity of Livingston to Big Timber) and Upper Stillwater Valley, Montana.** High wind in this valley is defined as sustained 50 mph or higher and/or gusts to 75 mph or greater.
- c. **Columbia River Gorge, Washington/Oregon.** From Cascade Locks, Oregon, to Troutdale, Oregon, including the hills five (5) miles either side of the Gorge: High wind in this area is defined as sustained 50 mph or higher and/or gusts to 75 mph or greater without regard to duration or areal extent.

3.1.2 Wind Advisories. In Western Region, Wind Advisories are optional and criteria are defined locally.

3.2 Excessive Heat. While basic heat index criteria may be used as shown in the following sections, WFOs are encouraged to work with community health organizations, universities, and other research organizations to utilize heat warning and advisory criteria based on the health impact to people within their CWFA. Systems have been established in cities throughout the world that base heat warnings and advisories on airmass type, time of year, number of consecutive days of heat, etc. For areas where this type of research has been done, the excessive heat criteria will be locally determined and are not subject to the rules of thumb below.

3.2.1 Excessive Heat Warnings. Basic WR excessive heat warning criteria is: **heat index (HI) at least 115 for 3 hours or more, with minimum nighttime heat index at or above 80.** However, it is expected that local offices should set their own criteria (in coordination with the SLO and adjacent offices) based on local health effects. Local offices that set their own criteria will post it on the WR SDM intranet site.

3.2.2 Heat Advisories. Heat Advisories are optional and are based on locally established criteria.

3.3 Excessive Cold.

3.3.1 Frost Advisory and Freeze Warning Criteria. WFOs may establish local criteria for Frost Advisories and Freeze Warnings to meet local user requirements.

3.3.2 Hard Freeze Warnings. In normally warm desert areas, cold temperatures for only a few hours can cause considerable damage to pipes and plants. To distinguish these types of situations from “normal” Freeze Warnings, WR WFOs may issue Hard Freeze Warnings when specific criteria have been established based on local research. Hard Freeze Warnings will follow the format for Freeze Warnings as specified in 10-515. Due to the “locked” nature of GHG headlines, forecasters must add “FOR A HARD FREEZE” to the end of the normal Freeze Warning headline.

3.4 Non-Precipitation Watches. Non-precipitation weather watch criteria are the same as warning criteria. However, when an advisory is issued following a watch, do not use the words “downgraded” to describe the advisory; an advisory is considered an upgrade to a watch.

4. Product Format. NPWs are segmented products. Format details are well described in Instruction 10-515.

4.1 Headlines. Headline standardization is extremely important nationally and policy stated in 10-515 must be followed at all times. Graphical Hazard Generator (GHG) software will produce the appropriate headline based on national policy, and must be used for all NPW products. GHG currently “locks” the headline parameters so they will match the corresponding VTEC code. WR WFOs are permitted to add information to the end of the headline to account for further definition of the hazard.

i. Elevation. WR WFOs may include elevation in the headline as necessary at the end of the headline. (e.g., “...HIGH WIND WARNING IN EFFECT UNTIL 6 AM TUESDAY ABOVE 7000 FEET...”)

ii. Area. To meet local customer requirements, an areal descriptive term may be included at the end of the headline. (e.g., “...DENSE FOG ADVISORY REMAINS IN EFFECT UNTIL 10 PM FRIDAY FOR *THE NORTHERN WILLAMETTE VALLEY*...”)

4.2 Segment Content. Within each segment the free text description of the event will be concise and restricted to addressing the specifics of the weather that is expected. Where appropriate, include mention of specific highways or other geographic locations where the public would be especially vulnerable. A definition of watch/warning must be included as shown in 10-515 if the event has not yet begun.

4.2.1 Attribution Statements. The attribution statement (THE NATIONAL WEATHER SERVICE IN [WFO LOCATION] HAS ISSUED A...) is required for the first issuance of a particular watch/warning/advisory. However, GHG produces this statement for all issuances of a winter weather product, and keys off of this statement to capture text for subsequent issuances. WFOs are encouraged to leave this statement in all non-precipitation weather products as generated by GHG to facilitate the update process.

4.2.2 Call-to-Action Statements. Concise call-to-action statements should be included in each segment if the statements relay extremely urgent messages, such as potentially life-saving actions. Other less urgent call-to-action statements may be included in one of three ways: either separated from other content within a segment by using the && separator; included as part of the overview; or grouped together after the \$\$ ending the final segment of the product. WFOs must remember that call-to-action statements not included in the segments will not be received by customers who program their systems to only receive their local segments.

4.3 Product Expiration and Updates. With the implementation of VTEC in WSW products, customers are using more automated means of disseminate winter weather information. It is imperative that all WSW products be updated before the Product Expiration Time (the time at the

end of the UGC line) is reached. This time is NOT the expiration time of the actual hazard, but rather the time by which a customer can expect an updated product. If an update is not sent before the Product Expiration Time, many dissemination systems will “drop” the event and may not properly process the update.

4.4 Event Expiration Statements. WR WFOs are encouraged to issue a final statement when a warning or advisory will be allowed to expire at its normal expiration time and has not been previously canceled. A short statement should be issued from 30 minutes before to 30 minutes after the expiration time stating that the hazard will end or has ended.



APPENDIX A

See also the examples contained in Appendix A of NWSI 10-515.

**Example 1: (Freeze Warning/Frost Advisories in one part of CWA, Wind Advisory in another)**

WWUS76 KLOX 192225  
NPWLOX

URGENT - WEATHER MESSAGE  
NATIONAL WEATHER SERVICE LOS ANGELES/OXNARD CA  
225 PM PST SAT NOV 19 2005

...GUSTY SANTA ANA WINDS THROUGH SUNDAY MORNING...

.STRONG HIGH PRESSURE EXTENDING SOUTHWEST FROM THE GREAT BASIN WILL CONTINUE TO SUPPORT WINDY CONDITIONS AT TIMES IN THE MOUNTAINS AND VALLEYS OF VENTURA AND LOS ANGELES COUNTIES THROUGH SUNDAY MORNING. OCCASIONAL WIND GUSTS OVER 35 MPH ARE EXPECTED IN THE ADVISORY AREA THROUGH EARLY TONIGHT. THEN...WINDS ARE EXPECTED TO INCREASE AND BECOME MORE WIDESPREAD LATER TONIGHT INTO SUNDAY MORNING AND WIND GUSTS WILL RANGE BETWEEN 45 AND 55 MPH IN WIND-PRONE AREAS OF THE MOUNTAINS AND VALLEYS.

IN CONTRAST...A CLEAR SKY AND CALM WIND OVER THE ANTELOPE VALLEY AND INTERIOR VALLEYS OF SAN LUIS OBISPO WILL ALLOW TEMPERATURES TO DROP INTO THE MID 20S TO LOWER 30S FOR SEVERAL HOURS LATE TONIGHT AND EARLY SUNDAY MORNING.

CAZ059-200500-  
/O.NEW.KLOX.FZ.W.0001.051120T1000Z-051120T1600Z/  
ANTELOPE VALLEY-  
225 PM PST SAT NOV 19 2005

...FREEZE WARNING IN EFFECT FROM 2 AM TO 8 AM PST SUNDAY...

THE NATIONAL WEATHER SERVICE IN LOS ANGELES/OXNARD HAS ISSUED A FREEZE WARNING...WHICH IS IN EFFECT FROM 2 AM TO 8 AM PST SUNDAY.

THE TEMPERATURE WILL DROP INTO THE MID TO UPPER 20S ACROSS MUCH OF THE ANTELOPE VALLEY DURING THE EARLY MORNING HOURS SUNDAY.

A FREEZE WARNING MEANS SUB-FREEZING TEMPERATURES BELOW 28 DEGREES FOR AT LEAST TWO HOURS ARE IMMINENT OR HIGHLY LIKELY. THESE CONDITIONS WILL KILL CROPS AND OTHER SENSITIVE VEGETATION. MEASURES SHOULD BE TAKEN TO PROTECT SENSITIVE CROPS AND VULNERABLE ANIMALS SHOULD BE KEPT INDOORS IN A BARN OR SIMILAR STRUCTURE.

\$\$

CAZ037-200500-  
/O.NEW.KLOX.FR.Y.0002.051120T1000Z-051120T1600Z/  
SAN LUIS OBISPO COUNTY INTERIOR VALLEYS-  
225 PM PST SAT NOV 19 2005

...FROST ADVISORY IN EFFECT FROM 2 AM TO 8 AM PST SUNDAY...

## NWS WR SUPP 11 SEPTEMBER 21, 2006

THE NATIONAL WEATHER SERVICE IN LOS ANGELES/OXNARD HAS ISSUED A FROST ADVISORY...WHICH IS IN EFFECT FROM 2 AM TO 8 AM PST SUNDAY.

THE TEMPERATURES WILL DROP INTO THE UPPER 20S TO LOWER 30S ACROSS THE LOWER VALLEY REGIONS OF INTERIOR SAN LUIS OBISPO COUNTY. A CLEAR SKY AND CALM WIND WILL ALLOW FOR AREAS OF FROST TO FORM DURING THE EARLY MORNING HOURS SUNDAY.

A FROST ADVISORY MEANS THAT AFFECTED AREAS CAN EXPECT AT LEAST TWO HOURS OF SUB-FREEZING TEMPERATURES BETWEEN 28 TO 32 DEGREES...WITH POSSIBLE DAMAGE TO CROPS AND TENDER VEGETATION. MEASURES SHOULD BE TAKEN TO PROTECT SENSITIVE CROPS AND VULNERABLE ANIMALS SHOULD BE KEPT INDOORS IN A BARN OR SIMILAR STRUCTURE.

\$\$

CAZ046-053-054-200500-  
/O.NEW.KLOX.WI.Y.0011.000000T0000Z-051120T2000Z/  
SANTA MONICA MOUNTAINS RECREATIONAL AREA-VENTURA COUNTY MOUNTAINS-  
LOS ANGELES COUNTY MOUNTAINS EXCLUDING THE SANTA MONICA RANGE-  
225 PM PST SAT NOV 19 2005

...WIND ADVISORY REMAINS IN EFFECT UNTIL 12 PM PST SUNDAY...

A WIND ADVISORY REMAINS IN EFFECT UNTIL 12 PM PST SUNDAY.

AREAS OF NORTH TO NORTHEAST WINDS WILL INCREASE TO 25 TO 35 MPH WITH GUSTS BETWEEN 45 TO 55 MPH LATER TONIGHT AND SUNDAY MORNING, WINDS WILL BE STRONGEST THROUGH PASSES AND CANYONS.

MOTORIST IN THE ADVISORY AREA SHOULD BE PREPARED FOR SUDDEN GUSTY CROSS WINDS.

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### **Example 2: (Dense Fog and Air Stagnation Advisories)**

WWUS76 KPQR 221929  
NPWPQR

URGENT - WEATHER MESSAGE  
NATIONAL WEATHER SERVICE PORTLAND OR  
1129 AM PST TUE NOV 22 2005

ORZ006-007-WAZ039-222030-  
/O.CAN.KPQR.AS.Y.0001.000000T0000Z-051124T0000Z/  
GREATER PORTLAND METRO AREA-CENTRAL WILLAMETTE VALLEY-GREATER VANCOUVER  
AREA-  
INCLUDING THE CITIES OF...HILLSBORO...PORTLAND...OREGON CITY...GRESHAM ...  
SALEM...MCMINNVILLE...DALLAS...VANCOUVER...BATTLE GROUND... WASHOUGAL  
1129 AM PST TUE NOV 22 2005

...AIR STAGNATION ADVISORY IS CANCELLED FOR THE CENTRAL WILLAMETTE VALLEY AND THE GREATER PORTLAND AND VANCOUVER AREAS...

**NWS WR SUPP 11 SEPTEMBER 21, 2006**

THE NATIONAL WEATHER SERVICE IN PORTLAND HAS CANCELLED THE AIR STAGNATION ADVISORY FOR THE CENTRAL WILLAMETTE VALLEY AND THE GREATER PORTLAND AND VANCOUVER AREAS. LIGHT EASTERLY WINDS THROUGH THE COLUMBIA GORGE HAVE HELPED PROVIDE SOME MIXING OF AIRMASS LATE THIS MORNING.

ORZ008-230330-  
/O.EXP.KPQR.FG.Y.0006.000000T0000Z-051122T1900Z/  
/O.CAN.KPQR.AS.Y.0001.000000T0000Z-051124T0000Z/  
SOUTH WILLAMETTE VALLEY-  
INCLUDING THE CITIES OF...EUGENE...CORVALLIS...ALBANY  
1129 AM PST TUE NOV 22 2005

...DENSE FOG ADVISORY HAS EXPIRED FOR THE SOUTH WILLAMETTE VALLEY-

...AIR STAGNATION ADVISORY REMAINS IN EFFECT UNTIL 4 PM PST WEDNESDAY FOR THE SOUTH WILLAMETTE VALLEY...

THE DENSE FOG ADVISORY FOR THE SOUTH WILLAMETTE VALLEY IS NO LONGER IN EFFECT. AN AIR STAGNATION ADVISORY REMAINS IN EFFECT UNTIL 4 PM PST WEDNESDAY.

A STRONG HIGH PRESSURE RIDGE WILL REMAIN OVER THE PACIFIC NORTHWEST THROUGH WEDNESDAY. THIS WEATHER PATTERN WILL RESULT IN LIGHT WINDS AND LITTLE MIXING OF THE AIR THROUGH WEDNESDAY AFTERNOON. CONDITIONS ARE EXPECTED TO IMPROVE THURSDAY AND THURSDAY NIGHT.

THIS PRODUCT REFLECTS METEOROLOGICAL CONDITIONS THAT LEAD TO AIR STAGNATION CONDITIONS...BUT NOT NECESSARILY TO AIR QUALITY PROBLEMS.

THIS PRODUCT WILL BE UPDATED AT LEAST EVERY 12 HOURS WHEN CONDITIONS EXIST OR ARE EXPECTED TO CONTINUE.

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